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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,853	12/22/2003	Dirk Herke	HOE-792	9107
20028	7590	05/17/2005	EXAMINER	
Lipsitz & McAllister, LLC 755 MAIN STREET MONROE, CT 06468			MCCLLOUD, RENATA D	
			ART UNIT	PAPER NUMBER
			2837	

DATE MAILED: 05/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/743,853

Applicant(s)

HERKE, DIRK

Examiner

Renata McCloud

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15, 17-24 is/are allowed.
- 6) ☒ Claim(s) 1-14 and 16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6,8-11,13,14,16 are rejected under 35 U.S.C. 102(b) as being anticipated by Arnaud et al (US 5473227).

Claim 1: A motor comprising a commutator having at least four sliding contacts (Fig. 2: b5,b6,b7,b8 or a,b,c,d), alternate ones of the contacts (b5/b7 or a/b, and b6/b8 or d/c) forming control groups with a next following contact and a preceding contact; at least four windings (E1,E2,E3,E4) connected to the contacts; a modulation stage generating at least one control signal modulated as to pulse width with a clock frequency substantially above the motor speed (Col. 3:54-56) and a control circuit (Fig. 3) controlled by the at least one control signal and having at least two load branches (Fig. 2: branch from P1 and P2) feeding the commutator (Fig. 2: b5,b6,b7,b8 or a,b,c,d) and being provided with an electronic switch (Fig. 3, Fig 8:F,K) controlled by the control signal modulated as to pulse width, each of the load branches being associated with one of the control groups for feeding the windings associated with the contacts (b5/b7 or a/b, and b6/b8 or d/c) of the one control group.

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Claim 2: each load branch (P1, P2) comprises a freewheeling component (Fig. 8:d1, d2) and an electronic switch (Fig. 8:F, K, Fig. 2:K) connected in series to the contacts (Fig. 2: b5,b6,b7,b8 or a,b,c,d),

Claim 3: the modulation stage generates a separate control signal modulated as to pulse width for each of the load branches (col. 9:30-41).

Claim 4: the at least two control signals have the same period duration (the branches are identical and are controlled by the same controller).

Claim 5: the at least two control signals have an identical pulse width modulation for the load branches (the branches are identical and are controlled by the same controller).

Claim 6: wherein the at least two control signals are phase-locked in relation to one another (the branches are identical and are controlled by the same controller).

Claim 8: the switch-on time period of one of the load branches and the switch-off time period of the other one of the load branches are predetermined relative to one another the time interval between the switch-on time period of the one of the load branches and the switch-on time period of the other one of the load branches varies in accordance with the value of the PWM ratio to be set (The device is controlled by PWM).

Claim 9: a control of the at least two load branches is brought about such that one of the load branches (P1) is switched on when the other one of the load branches (P2) is switched off.

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Claim 10: each of the load branches (P1, P2) is switched on only when the respectively other one of the load branches (P2, P1) is switched off.

Claim 11: each of the load branches (P1,P2) is switched off with a gap in time prior to any switching on of the respectively other one of the load branches (P2,P1)(There is a gap created as switch G opens and switch I opens).

Claim 13: the switch-on time period of the one load branch and the switch-off time period of the other load branch vary (Col. 6:63-65, varying the frequency causes varying time periods).

Claim 14: one of the load branches (P1) is switched on during the switching off or after the switching off of the other one of the load branches (P2).

Claim 16: the control circuit has a capacitor (Fig. 2:Ca) arranged on the supply side of the load branches.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arnaud et al (US 5473227)

Claim 12: Arnaud et al discloses the claimed invention except for a minimum period of time of 0.5 % of the period duration is provided between the

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switching off of each of the load branches and the switching on of the respectively other one of the load branches. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a minimum period of time of 0.5 % of the period duration, since it has been held that discovering the optimum or workable ranges involves on routine skill in the art. In re Aller, 105 USPQ 233.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arnaud et al as applied to claim 3 above, in view of Hanner (US 4479079).

Claim 7: Arnaud et al teach the limitations of claim 3. Referring to claim 7, they do not teach wherein the at least two control signals are shifted in phase relative to one another. Hanner teaches at least two control signals are shifted in phase relative to one another (Col. 4:10-21). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Arnaud et al to shift phases as taught by Hanner. The advantage of this would be the proper voltage and current will pass to the switches.

Allowable Subject Matter

6. Claims 15 and 17-24 are allowed.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Renata McCloud whose telephone number is (571) 272-2069. The examiner can normally be reached on Mon.- Fri. from 8 am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached on (571) 272-2800 ext. 4.

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The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Renata McCloud
Examiner
Art Unit 2837

RDM



MARLON T. FLETCHER
PRIMARY EXAMINER